Central Valley Regional Water Quality Control Board
15/16 March 2007 Board Meeting

Response to Comments for the County of Sacramento Public Works Agency
Kiefer Landfill Groundwater Extraction and Treatment Plant
Tentative Waste Discharge Requirements

The following are Regional Water Quality Control Board, Central Valley Region (Regional Water Board) staff responses to comments submitted by interested parties regarding the tentative Waste Discharge Requirements (Orders) for the County of Sacramento Public Works Agency Kiefer Landfill Groundwater Extraction and Treatment Plant. Public comments regarding the proposed Orders were required to be submitted to the Regional Water Board office by 9 February 2007 in order to receive full consideration.

The Regional Water Board office received comments regarding the tentative Order from the California Sportfishing Protection Alliance. The comments are summarized below, followed by staff responses.

CALIFORNIA SPORTFISHING PROTECTION ALLIANCE (CSPA) COMMENTS

COMMENT No. 1: The proposed Permit is based on an incomplete Report of Waste Discharge (RWD) and in accordance with Federal Regulations 40 CFR 122.21(e) and (h) and 124.3(a)(2), the State's *Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California* (SIP), and California Water Code Section 13377, the permit should not be issued until the discharge is fully characterized and a protective permit can be written. Furthermore, the proposed Permit is based on an incomplete record of the discharge

RESPONSE:
The Discharger has submitted a complete permit application for their NPDES permit in compliance with all State and Federal requirements (Cal EPA Form 200, U.S. EPA NPDES Form 1 and Form 2C). As stated in 40 CFR § 122.21(e)(1), "The Director shall not issue a permit before receiving a complete application for a permit except for NPDES general permits. An application for a permit is complete when the Director receives an application form and any supplemental information which are completed to his or her satisfaction. The completeness of any application for a permit shall be judged independently of the status of any other permit application or permit for the same facility or activity." 40 CFR § 124.3(a)(2) states, "The Director shall not begin the processing of a permit until the applicant has fully complied with the application requirements for that permit. See §§270.10, 270.13 (RCRA), 144.31 (UIC), 40 CFR 52.21 (PSD), and 122.21 (NPDES)." Accordingly, staff has concluded a complete NPDES permit application was submitted by the Discharger and the wastewater has been adequately characterized in compliance with the regulations cited above.

The data used in assessing and reviewing past performance by the Discharger is complete and representative in accordance with all regulatory requirements. There are no regulatory requirements that stipulate the number of years of data that must be used. The only requirement is that the data be representative of operations at the facility to be permitted. Guidance by the U.S. EPA suggests anywhere from three to five years of representative data be used. In this instance, staff has used three years of data from the receipt of the report of waste discharge.

COMMENT No. 2. The proposed Permit does not comply with the Board's Antidegradation Policy by failing to require an assessment of groundwater quality. The commenter further states that Finding IIB is incorrect in that during maintenance operations the groundwater is not treated. If the extracted polluted groundwater were actually treated, there would be no reason to divert the flow to the sedimentation basin during maintenance operations. Furthermore, the proposed Permit does not include groundwater monitoring to assess the threat to groundwater quality. Clearly, the discharge of untreated polluted groundwater to a percolation pond poses a threat to groundwater quality that needs to be prohibited and at a minimum monitored.

RESPONSE

There are no changes to the operations or discharge conditions with this tentative permit. The Discharger only diverts wastewater to the sedimentation basin when maintenance activities to the treatment system necessitate. The post-maintenance discharges have the potential risk of slightly elevated TDS, chlorine, and total trihalomethanes (THMs). The duration of the discharges is typically 2 to 6 hours with an annual average discharge of about 7 acre-feet. The sedimentation basin is a stormwater retention basin for the landfill and has a capacity of 300 acre-feet. The estimated stormwater entering the basin during an average rainfall year is approximately 260 acre-feet. The volume of the wastewater discharge is minimal compared to the stormwater discharges to the basin, thus, groundwater impacts caused by the post-maintenance discharges are likely insignificant. However, as an added precaution to ensure the groundwater is not degraded due to salts or THMs, the proposed Order requires monitoring of the wastewater entering the basin and includes effluent limitations for total dissolved solids and chlorine residual. These requirements are protective of groundwater.

COMMENT No. 3. The proposed Permit Effluent Limitations are not limited for mass contrary to Federal Regulations and advise from U.S. EPA.

RESPONSE

40 CFR § 122.25(f) states:

> *Mass limitations.* (1) All pollutants limited in permits shall have limitations, standards or prohibitions expressed in terms of mass except:
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> (i) For pH, temperature, radiation, or other pollutants which cannot appropriately be expressed by mass;
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> (ii) When applicable standards and limitations are expressed in terms of other units of measurement; or
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> (iii) If in establishing permit limitations on a case-by-case basis under §125.3, limitations expressed in terms of mass are infeasible because the mass of the pollutant discharged cannot be related to a measure of operation (for example, discharges of TSS from certain mining operations), and permit conditions ensure that dilution will not be used as a substitute for treatment.
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> (2) Pollutants limited in terms of mass additionally may be limited in terms of other units of measurement, and the permit shall require the permittee to comply with both limitations.

40 CFR § 122.25(f)(1)(ii) states that mass limitations are not required when applicable standards are expressed in terms of other units of measurement. All pollutants with numerical effluent limitations in this tentative permit are based on water quality standards and objectives. These are expressed in terms of concentration. Pursuant to 40 CFR § 122.25(f)(1)(ii), expressing the effluent limitations in terms of concentration is expressly allowed and is in no way contrary to Federal Regulations.

COMMENT No. 4. The proposed Permit contains an Effluent Limitation for acute toxicity that allows mortality that exceeds the Basin Plan water quality objective and does not contain Effluent Limitations for chronic toxicity. This does not comply with Federal regulations, at 40 CFR 122.44 (d)(1)(i).

RESPONSE

The proposed Order contains several mechanisms to ensure that effluent discharges do not cause acute or chronic toxicity in the receiving water. Receiving water limits proscribe the discharge from causing toxicity in the receiving water. The proposed Order includes end-of-pipe effluent limits for all toxic pollutants with reasonable potential to cause or contribute to an exceedence of water quality objectives in the receiving water. Where appropriate, these limits are developed based on aquatic life toxicity criteria. Furthermore, the proposed Order requires whole effluent chronic toxicity testing, which identifies both acute and chronic effluent toxicity. If this testing shows that the discharge causes, has the reasonable potential to cause, or contributes to an in stream excursion of the water quality objective for toxicity, the proposed Order requires the Discharger to investigate the causes of, and identify corrective actions to eliminate the toxicity.

Acute Toxicity. The acute whole effluent toxicity limits establish additional thresholds to control acute toxicity in the effluent: survival in one test no less than 70% and a median of no less than 90% survival in three consecutive tests. Some in-test mortality can occur by chance. To account for this, the acute toxicity test acceptability criteria allow ten percent mortality (requires 90% survival) in the control. Thus, the acute toxicity limits allow for some test variability, but impose ceilings for exceptional events (i.e., 30% mortality or more), and for repeat events (i.e., median of three events exceeding mortality of 10%). These effluent limitations are consistent with U.S. EPA guidance. In its document titled "Guidance for NPDES Permit Issuance", dated February 1994, it states the following:

> "*In the absence of specific numeric water quality objectives for acute and chronic toxicity, the narrative criterion 'no toxics in toxic amounts' applies. Achievement of the narrative criterion, as applied herein, means that ambient waters shall not demonstrate for acute toxicity: 1) less than 90% survival, 50% of the time, based on the monthly median, or 2) less than 70% survival, 10% of the time, based on any monthly median. For chronic toxicity, ambient waters shall not demonstrate a test result of greater than 1 TUc*."

Chronic Toxicity. The Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California (SIP) contains implementation gaps regarding the appropriate form and implementation of chronic toxicity limits. This has resulted in the petitioning of

a NPDES permit in the Los Angeles Region[1] that contained numeric chronic toxicity effluent limitations. As a result of this petition, the State Water Board adopted WQO 2003-012 directing its staff to revise the toxicity control provisions in the SIP. The State Water Board states the following in WQO 2003-012, "*In reviewing this petition and receiving comments from numerous interested persons on the propriety of including numeric effluent limitations for chronic toxicity in NPDES permits for publicly-owned treatment works that discharge to inland waters, we have determined that this issue should be considered in a regulatory setting, in order to allow for full public discussion and deliberation. We intend to modify the SIP to specifically address the issue. We anticipate that review will occur within the next year. We therefore decline to make a determination here regarding the propriety of the final numeric effluent limitations for chronic toxicity contained in these permits.*" The process to revise the SIP is currently underway. Proposed changes include clarifying the appropriate form of effluent toxicity limits in NPDES permits and general expansion and standardization of toxicity control implementation related to the NPDES permitting process.

Since the toxicity control provisions in the SIP are under revision it is infeasible to develop numeric effluent limitations for chronic toxicity. Therefore, the proposed Order requires that the Discharger meet best management practices for compliance with the Basin Plan's narrative toxicity objective, as allowed under 40 C.F.R. 122.44(k).

The proposed Order protects aquatic life beneficial uses by implementing numerous measures to control individual toxic pollutants and whole effluent toxicity. Both the acute limits and receiving water limits are consistent with numerous NPDES permits issued by the Regional Water Board and throughout the State and are appropriate.

COMMENT No. 5. The Deer Creek Temperature Objectives, Table 5, are not protective of the beneficial uses of cold water aquatic habitat and do not comply with Federal Regulations and the California Water Code. The Deer Creek Temperature Objectives included in the proposed permit were adopted based on information from the upstream Deer Creek Wastewater Treatment Plant. The

[1] In the Matter of the Review of Own Motion of Waste Discharge Requirements Order Nos. R4-2002-0121 [NPDES No. CA0054011] and R4-2002-0123 [NPDES NO. CA0055119] and Time Schedule Order Nos. R4-2002-0122 and R4-2002-0124 for Los Coyotes and Long Beach Wastewater Reclamation Plants Issued by the California Regional Water Quality Control Board, Los Angeles Region SWRCB/OCC FILES A-1496 AND 1496(a)

conclusions of the site-specific study were that cold-water fish were incidental to upstream waters.

RESPONSE

The Deer Creek temperature objectives in the Basin Plan apply throughout Deer Creek, not just the upper reaches near the Deer Creek Wastewater Treatment Plant. The proposed Order implements the Basin Plan by including temperature receiving water limitations in accordance with the site-specific objective for Deer Creek. Effluent limitations for temperature are not necessary, because the discharge does not have reasonable potential to cause or contribute to an exceedance of the temperature site-specific objectives in the receiving water.

COMMENT No. 6. The Discharger does not provide best available technology (BAT) and best practicable treatment and control (BPTC) of the discharge as required by the Clean Water Act, Federal Regulations, and the California Water Code by failing to adequately treat volatile organic compounds, which should be reduced to meet non-detectable concentration limitations on an instantaneous maximum basis.

RESPONSE

The U.S. EPA has not developed national regulations for wastewater discharges from groundwater treatment systems. Therefore, technology-based effluent limitations are based on the Best Professional Judgment (BPJ) of the permitting authority. The Discharger meets BAT and BPTC by utilizing air stripping towers to volatilize the VOCs, which can consistently reduce VOCs to less than 0.5 µg/L. The issue is not in the treatment technology, but rather in the averaging period for the proposed effluent limitation for VOCs. We agree that an effluent limitation for VOCs with a shorter averaging period is warranted. Therefore, the effluent limitations for VOCs have been changed from average monthly to maximum daily. An instantaneous maximum effluent limitation is not appropriate for VOCs, because compliance determination would require continuous monitoring, which is infeasible for VOCs. The appropriate VOC limitation when using grab samples is a maximum daily effluent limitation.

COMMENT No. 7. The proposed permit contains an inadequate reasonable potential analysis (RPA) by using incorrect statistical multipliers in violation of Federal Regulations.

RESPONSE

Staff conducted the RPA in accordance with Section 1.3 of the SIP. Although the SIP applies directly to the control of CTR priority pollutants, the State Water Board has held that the Regional Water Board may use the SIP as guidance for water quality-based toxics control.[2] The SIP states in the introduction "*The goal of this Policy is to establish a standardized approach for permitting discharges of toxic pollutants to non-ocean surface waters in a manner that promotes statewide consistency."* Therefore, in the proposed Order the RPA procedures from the SIP were used to evaluate reasonable potential for both CTR and non-CTR constituents.

COMMENT No. 8. The proposed Permit reduces acute toxicity testing based on an incomplete record and despite clear instances of toxicity. 45 of the 49 acute toxicity tests had greater than or equal to 90 % survival of the test species. Since the receiving stream is classified as ephemeral by the proposed Permit; 90% survival correlates to 10% mortality in the receiving stream. The Regional Board does not discuss the 4 of 49 toxicity tests (8 percent) that were less than 90 % survival. The reduction of monitoring for toxicity when the Discharger has caused greater than 10% mortality in the receiving stream more than 8% of the time is appalling and is contrary to the Federal Regulation 40 CFR 122.41(j)(1) which requires that samples taken for the purpose of monitoring shall be representative.

RESPONSE

The data used in assessing and reviewing past performance by the Discharger is complete and representative in accordance with all regulatory requirements. There are no regulatory requirements that stipulate the number of years of data that must be used. The only requirement is that the data be representative of operations at the facility to be permitted. Guidance by the U.S. EPA suggests anywhere from three to five years of representative data be used. In this instance, staff used four years of data, from December 2002 through November 2006, which is adequate. However, to satisfy CSPA's concerns, monthly acute toxicity data from January 2000 through January 2007 was evaluated. Of the 86 sampling events, only 4 samples had less than 90% survival. The four sampling events with less than 90% survival included two at 85%, one at 80%, and one at 75% survival.

Acute toxicity monitoring is typically required on a quarterly basis for discharges from groundwater extraction and treatment facilities. This is due to the nature of the discharges, which are consistent with known toxicants

[2] See, Order WQO 2001-16 (Napa) and Order WQO 2004-0013 (Yuba City)

that can be controlled through chemical-specific effluent limitations. The previous order required monthly monitoring. However, based on acute toxicity data from the past seven years, the effluent is consistently not toxic. Therefore, reduced acute toxicity testing is warranted and is in compliance with federal anti-backsliding regulations.